

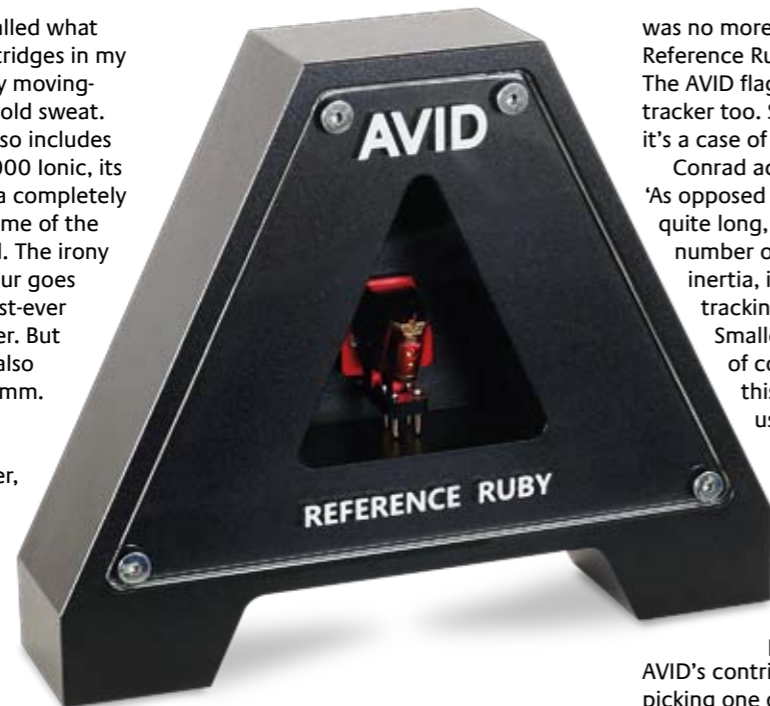
AVID Reference Ruby

Synonymous with top-end turntables for two decades, AVID has extended its 'Very Interesting Design' portfolio to include MC pick-ups. Here's its open-bodied flagship
 Review: Ken Kessler Lab: Paul Miller

Irrespective of having installed what must be thousands of cartridges in my life, AVID's Reference Ruby moving-coil brought me out in a cold sweat. The top model in a trio that also includes the £4000 Boron and the £2000 Ionic, its £6000 sticker price, allied to a completely exposed cantilever, reminded me of the first cartridge I ever destroyed. The irony was not lost on me: that honour goes to the Dynavector 23R, the first-ever cartridge with a ruby cantilever. But unlike AVID's ruby rod, it was also one of the shortest at just 2.3mm.

THE LONG GAME

Here we are, four decades later, and AVID's founder and chief architect, Conrad Mas, has used the same cantilever material, but he went the other way regarding its length. Dynavector has cited 'reduced vibration' in its quest to produce ever shorter gem cantilevers, its Karat Diamond MC pick-up featuring a mere 1.7mm rod coupled with a micro-ridge stylus [HFN Jul '12]. In practice, editor PM tells me, the response of the 23R and 17D



ABOVE: Just shy of 1kg, this CNC-machined alloy 'A' frame is arguably the most secure packaging ever devised for a high-end MC! AVID's lower-cost Boron (£4000) and Ionic (£2000) MCs come in a circular acrylic presentation case

was no more extended than that of the Reference Ruby, if arguably a little flatter. The AVID flagship is certainly the better tracker too. So, as with everything in audio, it's a case of balancing the trade-offs.

Conrad acknowledges the juggling act, 'As opposed to a short cantilever ours is quite long, but we have reduced the number of coils to manage mass and inertia, improving the response and tracking' [see PM's Lab Report, p71]. Smaller coils mean a lower output, of course, but AVID has countered this by beefing up the magnet used, achieving a claimed (medium/low) 0.32mV.

All of this points to a situation now common in the world of high-end cartridges. Few brands make their own – a couple of Japanese suppliers produce MCs to order – but AVID's contribution goes far beyond simply picking one out of a catalogue and sticking its logo on the body. Conrad had a clear specification in mind and then honed the final product by auditioning a series of cantilever/coil/magnet permutations.

He says, 'Over the years, AVID has diversified from turntables into electronics, loudspeakers, cables and racks. To make a complete system, we just needed tonearms and cartridges. In fact the tonearms are coming in a few months'.

GOLD PLATED

As luck would have it, AVID found an agent in Japan who has connections with a Japanese OEM supplier. From here, the long haul of evaluating cantilevers, stylus profiles, magnets, etc, began.

A company known for superior metalwork, AVID designed and manufactured the body and yokes, which are then shipped to Japan for final assembly of all the other parts, including motor, cantilever, stylus,

pins and wiring. So the construction of the Reference Ruby is close to a 50/50 balance of home-grown and imported elements – AVID has not simply engraved its signature 'A' on the pick-up's body!

AVID even supplies the packaging, the most lavish and over-the-top I have ever seen for any cartridge. It imparts, in an Apple-like manner, a tactile sense of security, delivering that buzz one gets when unpacking a new iPhone.

Inside you find a superbly-constructed cartridge, one that's far removed from the deliberately 'artisan' MCs which are intended to suggest hand-made origins. This, for me, is not a value judgement, nor am I suggesting that one is superior to the other. For certain individuals, the bespoke, no-two-alike approach is more personal, while for others the flawlessness of a perfectly-proportioned and finished cartridge evokes an air of precision. It's a case of a Morgan versus a Mercedes-Benz. And I am able to see the joy in both.

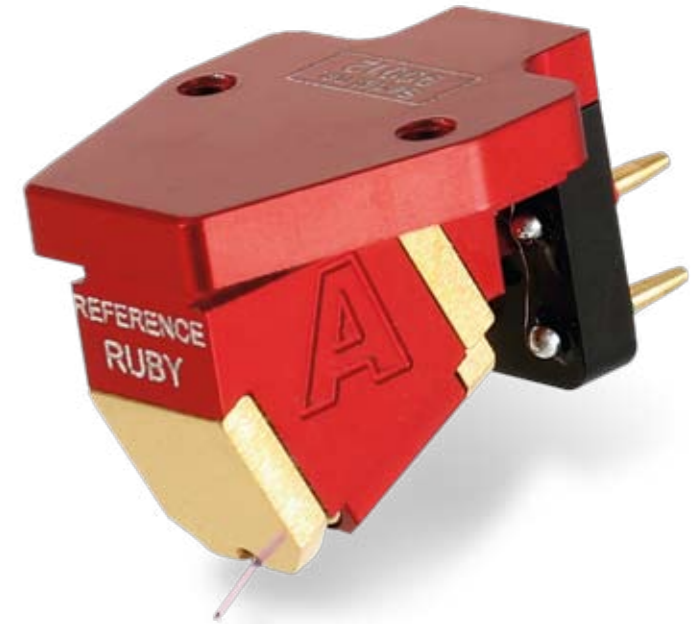
The Reference Ruby's body is described as 'solid aluminium machined on a five-axis CNC'. The magnets are neodymium and the coils are 'specially-treated' 99%-pure copper. The yokes are CNC laser-cut from mild steel, which are then gold-plated and, thanks to its flat front and parallel sides, the ensemble is simple to align.

Although the cartridge is minimalist in that it isn't constructed in the form of a frame holding its components, which are then protected by a screw-on, separate body shell, neither is it as 'naked' as cartridges utterly devoid of any protective container, such as a van den Hul Condor or Benz Micro Glider [HFN Nov '10].

When viewed from the side, no fragile wires appear to be exposed between the pins and the cartridge's internals [see pic, p71]. No, the sole element of fragility here is that heart-stopping cantilever.

Luckily for me, my preferred Graham Phantom Elite tonearm uses detachable wands and a jig for setting the overhang, so my nervousness was mildly assuaged. The Reference Ruby comes with a sensible stylus guard, which is more than I can say for a number of hideously expensive MCs, which slides in from the front in two slots, but they do not grip it and it will slip out

RIGHT: The Reference Ruby's massive alloy mounting plate has threaded inserts for locking tight into a headshell. The ruby cantilever is very exposed but this does make for swift and accurate cueing



easily if the body of the cartridge is held nose-downward. So be careful.

IT'S A GEM

Fed into an ETA E-Glo phono stage, and set to just over 100ohm, it tracked perfectly at the recommended 2g. VTA was just right to my ears with the top plate of the cartridge parallel to the LP, but a bit of mild tweaking with the angle fine-tunes the treble for those who want more or less bite than I prefer. But this isn't an MC likely to induce listener fatigue, as the top-end is sweeter than

any other I have tried with a ruby cantilever. Which is why I found the Reference Ruby so surprising.

It took all of my willpower to resist playing 'Ruby Tuesday', 'Ruby, Don't Take Your Love To Town', 'Ruby Baby' or any of the other songs with that name in the title. Instead, I started with the new vinyl version of Gene Clark's *No Other* [4AD 0071 MXX] and was taken aback by the midband which acquired a sheen that would turn out to be the Reference



LEFT: Seen end-on emerging from a gold-plated yoke, the ruby cantilever moves up into position, and the coils aligned, once tracking at 2g

Ruby's signature sound. It was as more-ish as a handful of Maltesers, Clark's vocals replete with the plaintiveness they always seemed to possess, but somehow their character was more resonant, and slightly richer. Above all, they were inescapably life-like – which demanded a swift listen

'It was as more-ish as a handful of Maltesers'

via Falcon Acoustics' LS3/5As [HFN Feb '18], my arbiter of vocal authenticity.

It's the album's title track that has always been my favourite selection from what is, by any sane measure, a masterpiece. 'No Other' is an odd, unnerving, almost

menacing composition that ought to be the basis of a David Lynch film, and it deserves to be presented in a manner as complementary to its dark mood as it is to the sound. As pretentious as that may seem, hear the track and you'll be hard-pressed not to think of the word 'eerie'.

FOR GOOD MEASURE

All of this emerged through a soundstage that was positively cavernous and carved out with the kind of precision that appeals to the sort of listener who measures it with a tape. Each sound was located in its own three-dimensional zone, but the aforementioned sheen of the Reference Ruby manifested itself as a consistently applied atmosphere from wall to wall, so nothing appeared disjointed.

To put it another way, it completely avoided the sort of sound which consists of lots of layered but flat images, like in failed 3D films. This soundstage is so convincing that it all but begs the listener to get up

WAXING RUBY

During a conversation that covered myriad hi-fi-related topics, AVID's Conrad Mas revealed that the express goal of the Reference Ruby was 'to encourage listening sessions where you find yourself playing LP after LP until many hours have passed unnoticed'. I will not recount how he got one of HFN's contributors in trouble by achieving this when said writer should have been elsewhere, but I get it, having now experienced the cartridge's seductive properties. What differentiates the Reference Ruby from its siblings is the solid ruby cantilever – one of the longest I've seen [see inset picture] and which terrified me during installation.

It was chosen after Conrad auditioned a range of cantilever materials, the choice affecting not just sound 'colour' but moving-mass and output. He says, 'We arrived at the ruby cantilever because it was sonically far better than anything else'. Among the latter were boron, sapphire and other contenders, but his findings mirrored that of Dynavector when it announced ruby and diamond-cantilevered MCs in 1979. The revelation? Cantilevers may play a far greater role in determining LP sound than stylus profile, coil material or other oft-cited details.



CARTRIDGE

RIGHT: Another view of the CNC laser-cut yoke, cantilever and (just visible) fine lead out wires from the coils. The colour-coded but chamfered cartridge pins need care to ensure a snug fit



and walk around the players, as if it were a hologram at Epcot. Thanks to this spacing, as well as the retrieval of detail, when hearing the twin guitars in 'Strength Of Strings', the listener is graced with a crash course in harmonics, the luthier's craft and the presence of desired resonances.

With the mono pressing of The Remains' eponymous debut [Epic LN24214], I was able to assess what this cartridge could do with high-energy material, rather than recordings like *No Other*, which are best addressed with finesse. The Remains' signature number, 'Don't Look Back', is known for its frantic percussion, and this exposed the Reference Ruby's adaptability: the cartridge had no problem handling the sheer power of hard rock.

COMING CLEAN

An integral part of this is, as you'd expect, an abundance of deep, controlled bass, with sharp transient attack up top – the Reference Ruby manages to deliver both, and the latter reminded me in no uncertain terms of its Dynavector antecedent. As warm and welcoming as is this latest Ruby's sound, it is also crisp and cleanly-etched, without being overly clinical. Conrad Mas's desire to make this cartridge something you want to listen to for hours on end was proving attainable.

There are more commanding pick-ups, the TechDAS TDC01 Ti [HFN Sep '14] at double the price being the master of this, but the Reference Ruby provides sufficient slam when asked, and almost matches the former's recreation of scale. Comparing the two, however, by equating soundstage to soundstage, is the sort of exercise which might amuse an architect, or the aforementioned audiophile who listens with a tape measure. Let me assure you that the differences are audible, but not mutually exclusive.

Here's where personal preference becomes the arbiter. The TDC01 Ti possesses a grandeur which I've not heard any other cartridge match. The Reference Ruby, on the other hand, veers more toward intimacy,

but these are matters of the tiniest degrees. So my heart belongs to the TechDAS TDC01 Ti, followed by Koetsu's Urushi [HFN Nov '19] and a Decca or two, while the DS Audio cartridges [HFN Nov '15, Jun '17, Dec '17 and May '19], exist in a world of their own. All are wonderful. For me, the Reference Ruby joins this select group of cartridges because of the way it handled Dusty Springfield's 'Son Of A Preacher Man' from the *Dusty In Memphis* album [Run Out Groove/ Atlantic ROGV-089]. One trait is enough to challenge any playback system. It's her breathiness. And the Reference Ruby? It captures this with utter truthfulness.

As the courier collected the cartridge to return to AVID, all I could hear was Dion singing, 'Ruby, Ruby, when will you be mine'. ☺

HI-FI NEWS VERDICT

Nostalgia aside, ignoring how it recalls a favourite Dynavector of many decades past, the AVID Reference Ruby proved to be one of those components that, within a few bars, declares its excellence. Sonically cooler-sounding than, for example, a classic Koetsu, it steers clear of the ultra-hygienic, too-forensic stance this hack associates with gem cantilevers. Mas was right: it encourages all-night sessions.

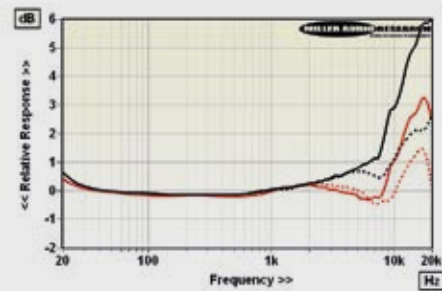
Sound Quality: 88%



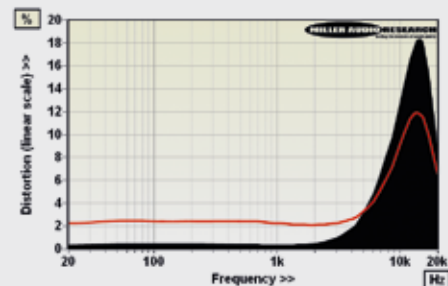
AVID REFERENCE RUBY

While some design and performance features – including the X-shaped coils, superb tracking performance and extended but 'bright' treble response – all have a Lyra-esque quality [HFN May '13], AVID's flagship MC is arguably closer to Sumiko's Starling [HFN Mar '20] in respect of its arm/phono preamp matching. In order to maintain a low moving mass, the long ruby cantilever carries fewer coil turns, and thus has a lower internal resistance and output, the latter precisely matching AVID's 0.32mV spec. (re. 1kHz/5cm/sec). The channel balance is tight at 0.3dB, stereo separation held to between 23-28dB (20Hz-20kHz) and, while the 'micro-ridge' stylus is well polished and precisely mounted on its ruby cantilever, VTA looks closer to 30° than the usual 20-24°. Compliance is low at 9cu and this, combined with the 9g bodyweight, renders it very compatible with today's higher (11-16g) effective mass tonearms.

Despite its relatively 'stiff' compliance, the Ruby is a very secure tracker at its recommended 2.0g, achieving ~75µm via the left/right channels, respectively, and keeping hold of a high +15dB groove modulation (re. 315Hz/5cm/sec) at ~0.4% THD. There is some slight asymmetry in the generator here, the right channel having a hotter presence leading to a kick above 8kHz that reaches +6dB/20kHz on lateral (L+R) cuts and +3dB/20kHz with vertical (L-R) traces [solid traces, Graph 1, below]. The left channel [dashed traces] has a milder +2dB/20kHz (lateral) and +1.5dB/20kHz (vertical) response, but distortion is uniformly high on both channels – up to 20%/15kHz (–8dB re. 5cm/sec) – not because the Reference Ruby is especially non-linear, but because it has an uncommonly extended HF response. PM



ABOVE: Freq. resp. curves (–8dB re. 5cm/sec) lateral (L+R, black) vs. vertical (L–R, red). L channel dashed



ABOVE: Lateral (L+R, black infill) and vertical (L–R, red) tracing and generator distortion (2nd-4th harmonics) vs. frequency from 20Hz-20kHz (–8dB re. 5cm/sec)

HI-FI NEWS SPECIFICATIONS

Generator type/weight	Moving-coil / 9.1g
Recommended tracking force	18-22mN (20mN)
Sensitivity/balance (re. 5cm/sec)	318µV / 0.3dB
Compliance (vertical/lateral)	9cu / 8.5cu
Vertical tracking angle	30 degrees
L/R Tracking ability	75µm / 75µm
L/R Distortion (–8dB, 20Hz-20kHz)	0.47–20% / 0.38–18%
L/R Frequency resp. (20Hz-20kHz)	–0.3 to +2.7dB / –0.4 to +6.2dB
Stereo separation (1kHz / 20kHz)	28dB / 23dB